

6-18-02

GP/1741

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Docket No. P1408

TECHNOLOGY CENTER 1700

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APPLICANT: SERGEY LOPATIN  
ALEXANDER H. NICKEL  
JOFFRE F. BERNARD

SERIAL NO.: 10/082,433

EXAMINER: UNASSIGNED

FILED: FEBRUARY 22, 2002

ART UNIT 1741

FOR: METHOD OF CONTROLLING ZINC-DOPING IN A COPPER-ZINC  
ALLOY THIN FILM ELECTROPLATED ON A COPPER SURFACE  
AND A SEMICONDUCTOR DEVICE THEREBY FORMED

COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

## TRANSMITTAL LETTER

Dear Sir:

In connection with the above referenced patent application, transmitted herewith are the following:

1. Information Disclosure Statement (1 pages);
2. Information Disclosure Statement By Applicant Form PTO-1449 (1 page);
3. U.S. Patent No. 6,197,181 B1 (18 pages);
4. U.S. Patent No. 6,022,808 (6 pages);
5. Article "A Practical Guide to Semiconductor Processing" (3 pages);
6. Article "Electrochemical Codeposition and Electrical Characterization of a Copper-Zinc Alloy Metallization" (2 pages);
7. Article "Using Electrochemistry to Improve Copper Interconnect" (4 pages);
8. Article "ECD Seed Layer for Inlaid Copper Metallization" (2 pages); and

9. Post card in acknowledgment of receipt of all transmitted materials.

Please date-stamp the enclosed postcard and return same to the undersigned in acknowledgment of receipt of all transmitted material.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Victor Flores", with a stylized, flowing script.

Victor Flores

Reg. No. 29,638

VF/sgs

June 14, 2002

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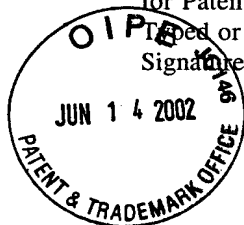
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Typed or Printed Name of Person Mailing Paper or Fee: Patricia Aguillon

Signature: Pat Aguillon



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INFORMATION DISCLOSURE STATEMENT

Applicant hereby makes available the references listed on the enclosed form PTO-1449, Information Disclosure Statement by Applicant to assist the Patent and Trademark Office in its examination of this application.

The disclosure of the references does not constitute an admission that they are relevant or material to the claims or are "prior art" to the subject application. No representation is made that better references do not exist. Complete copies of the references are enclosed.

Respectfully submitted,

Victor Flores  
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Reg. No. 29,638

VF/sgs  
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Substitute for FORM PTO-1449  
U.S. Department of Commerce  
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**INFORMATION DISCLOSURE STATEMENT**  
**BY APPLICANT**  
(Use several sheets if necessary)

Application Number 10/082,433

Filing Date 2/22/2002

First Named Inventor Sergey Lopatin

Attorney Docket No. P1408

Sheet 1 of 1

**U.S. PATENT DOCUMENTS**

Examiner Initial	CiteNo.	U.S. Patent Document Number	Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	6,197,181 B1	Chen, Lin Lin	3/6/2001	
	2	6,022,808	Nogami, et al.	2/8/2000	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials'	Cite No.	Foreign Patent Document Office Number Code	Name of Patentee or Applicant of Cited document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials'	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	1	PETER VAN ZANT, "Microchip Fabrication: A Practical Guide to Semiconductor Processing", 3 <sup>rd</sup> Ed., p. 392 and 397 (1997)
	2	A. Krishnamoorthy, D. Duquette and S. Murarka, "Electrochemical Codeposition and Electrical Characterization of a Copper-Zinc Alloy Metallization", in edited by Andricacos, et al., Electrochem Society Symposium Proceedings, Vol. 99-9, May 3-6, Seattle, p. 212
	3	J. Cunningham, "Using Electrochemistry to Improve Copper Interconnect", in Semiconductor International, Spring 2000 (May)
	4	L. Chen and T. Ritzdorf, "ECD Seed Layer for Inlaid Copper Metallization" in edited by Andricacos, et al., Electrochem Society Proceedings, Vol. 99-9, May 3-6, Seattle, p. 122

Examiner Signature:

Date Considered:

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English Language Translation is attached.

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